Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for use in detecting the presence of a selected microscopic pathogen in a sample comprising:

(a) providing a substrate having a detection region thereon comprising a surface comprising microstructures including depressions having width and depth, wherein:

(i) the width and depth of the depressions are selected in size to: ~~(i)~~ align a liquid crystal material in contact therewith; ~~and~~

(ii) the width and depth of the depressions are selected in size to be occupied by the selected pathogen; and

(iii) the width of the depressions are on the order of the size of the selected pathogen;

(b) treating the surface of the detection region to provide a layer thereon that blocks non-specific binding of pathogens to the surface and that includes a binding agent that specifically binds the selected pathogen to be detected:

(c) applying a sample to be tested for the presence of the specific pathogen to the surface of the detection region of the substrate, wherein when the specific pathogen is present in the sample the specific pathogen binds to the binding agent and at least partially occupies the depression; and

(d) thereafter applying the liquid crystal material to the detection region that will be aligned by the microstructures on the surface of the substrate in the absence of binding pathogen particles to the surface of the substrate, wherein the presence of the selected pathogen bound to the binding agent and at least partially occupying the depression will be manifested by a visually observable disordering of the liquid crystal material.

2. Cancelled.

3. (Original) The method of Claim 1, further comprising coating at least a portion of the detection region with an inorganic material selected from the group consisting of an oxide of silicon, an oxide of a metal, a metal, and combinations thereof.

4. (Previously Presented) The method of Claim 3, wherein the inorganic material is silver or gold and the method further comprises treating at least a portion of the silver or gold with a mercaptan or a disulfide.

5. (Original) The method of Claim 1, wherein the substrate is formed of a molded polymer plastic.

6. (Original) The method of Claim 5, wherein the molded polymer plastic comprises polystyrene, polycyanoacrylate, or polyurethane.

7. (Original) The method of Claim 5, wherein the molded polymer is polydimethylsiloxane.

8. (Original) The method of Claim 1, wherein the treating of the surface of the detection region includes applying bovine serum albumin to the surface of the detection region of the substrate.

9. (Original) The method of Claim 8, wherein the treating of the surface of the detection region includes applying an immunoglobulin or a portion thereof to the detection region surface that provides a specific binding site for the selected pathogen.

10. (Original) The method of Claim 1, wherein the selected pathogen is a virus and the depressions on the surface of the detection region have a width and depth in the range of 5 nm to 500 nm.

11. (Original) The method of Claim 1, wherein the depressions on the surface of the detection region of the substrate comprise parallel grooves having a width of approximately 100 nm.

12. (Original) The method of Claim 11, wherein the grooves are separated by ridges having a width of about 100 nm.

13. (Original) The method of Claim 11, wherein the grooves have a depth of approximately 100 nm.

14. (Original) The method of Claim 1, wherein the binding agent is selected from the group consisting of peptides, polypeptides, RNA, DNA, biotin, avidin, fragments of antibodies, antibodies, and sugars.

15. (Original) The method of Claim 1, wherein the selected pathogen is a bacteria and the depressions on the surface of the detection region have a width and depth in the range of 0.1 μm to 10 μm.

16. (Original) The method of Claim 1, wherein substantially all the binding agent is located in the depressions of the detection region.

Claims 17-63. (Cancelled)